RESPONSE TO COMMENTS
RECEIVED ON THE

PERMIT RENEWAL
For The

ECDC ENVIRONMENTAL LC CLASS V LANDFILL

A 30-day public comment period on the permit renewal for the ECDC Class V Landfill, submitted by ECDC Environmental LC, ended October 24, 2007. A public hearing was held in the East Carbon County Council Chambers October 11, 2007. The following are responses to the comments received during the public hearing and written comments submitted either by mail or by email to the Division of Solid and Hazardous Waste before the end of the comment period are included below.

Comment:

One commenter expressed concern about the number of modifications made to the ECDC facility permit and wanted to new the number, public notice given and what the modification related to.

Response:

As required by Utah Administrative Code (UAC) R315-311-3(1), public hearings were held for all major modifications to this permit. Utah Administrative Code (UAC) R315-311-2(1)(a) states that minor modifications to permits do not require public comment. The following is a list of major permit modifications and dates:

April, 1991	Permit Modification to accept wastes from United States and Canada. This public notice for this modification was published in the Sun Advocate, The Salt Lake Tribune, and the Deseret News on April 9, 1991.
February 1992	Permit Modification to change the frequency of Proctor tests and permeability tests of clay liners. The public notice for this modification was published in the Sun Advocate, The Salt Lake Tribune, and the Deseret News on February 27, 1992
March 2000	Alternative Liner for Supercells to include geosynthetic clay liner (GCL) materials in sump, cell bottom, and embankments as a replacement for the clay liner that was part of the original design - minor modification. The Executive Secretary of the Solid and Hazardous Waste Control Board has previously determined that GCL liners and compacted clay liners are equivalent. The public notice for this modification was published in the Sun Advocate, The Salt Lake Tribune, and the Deseret News on March 21, 200.

July 2000	Permit Modification to abandon monitoring well #7W (a dry well) as part of the construction of Supercell 1A. The public notice for this modification was published in the Sun Advocate, The Salt Lake Tribune, and the Deseret News on June 5, 2000
August 2001	Permit Modification to allow for GCL to line the embankment of cell 7 and to line the top of the embankment between Cell 7 and Supercell 1 with HDPE and GCL and fill the space with waste - minor modification (see March 2000 modification). . The public notice for this modification was published in the Sun Advocate, The Salt Lake Tribune, and the Deseret News on July 26, 2001.
April 2002	Permit Modification to replace two feet of compacted clay on the cell floor with a geosynthetic clay liner (GCL) and to allow the use of a GCL without a vapor/moisture barrier on the soil embankment.. The public notice for this modification was published in the Sun Advocate, The Salt Lake Tribune, and the Deseret News on February 19, 2002.

All permit modification documents were sent to the local health department for display during the public review period in an area where the public could review the documents.

Comment:

One commenter expressed the concern that the proposed modification would reduce the protection provided by the current design.

Response:

Solid waste rules allow for all facilities to modify designs to allow for the integration of new materials or methods as long as the facility can demonstrate that the design changes still meet the requirements of the minimum design requirements established in the *Solid Waste Permitting and Management Rules* R315-301 through 320. The proposed change will have negligible effect on the amount of leachate that could pass through the liner system.

The original approval for ECDC's clay liner included 36 inches of compacted clay. Of the 36 inches of clay, the bottom 12 inches was considered a sacrificial layer and the remaining 24 inches was required to meet the specification of 1x10-7 permeability. The bottom 12 inches was considered sacrificial because it was placed directly on a liner and couldn't be compacted with heavy equipment without damaging the liner.

In March of 2000 ECDC received approval to use a GCL as a substitute for the 24 inches of compacted clay required in the original design (See Response above). GCL's are recognized throughout the industry as being equivalent to constructed clay liners. The use of GCL to substitute for the required 24 inch compacted clay liner has bee approved by the Executive Secretary for landfills in Utah. A GCL is generally considered to provide more protection than a constructed clay liner. This extra protection comes from the consistency and manufacturing control that is inherent in the GCL. Clay liners that are constructed in-place are subject to variability in the quality of the clay and the construction methods. They are also affected by weather during construction. Even with an effective quality assurance program, a constructed clay liner will not have the same consistent quality that can be obtained with a GCL.

The landfill design has been divided into three separate design areas of the landfill. These three areas include the embankment, the floor and the sump designs. It is important to distinguish these design areas when interpreting the overall landfill design. While this permit design change reduces the liner design of the floor from two HDPE liners to one HDPE liner, it is important to consider that the floor design is sloped at a 2% grade to the sump and no leachate will pond on top of the floor. Unless there is a volume of leachate ponding on top of the liner (the engineering term is "head"), there can be no expected leakage through the liner unless there is a tear or hole.

The sump area of the landfill has been enhanced during the last major design change included in the Supercell. In the Supercell 1A North design, the sump construction consists of 36 inches of compacted clay and two layers of GCL and two HDPE liners. The volume of the sump is large enough to contain the water generated from a "25-year" storm event. Since sumps anticipate that leachate will pond on top of the liner, the Division continues to strictly maintain this design.

As part of the current floor design change, ECDC has proposed to pursue new technology for assuring the integrity of liners after construction and after the protective layer of soil is placed on the liner. EPA has estimated that up to 70% of liner tears occur after the liner has been covered by the protective cover. In this technology, an electrical current is measured across the liner after installation. Tears and holes can be identified and located by using this technique so repairs to the liner can be made before any waste is placed in the cell.

The Division anticipates that the construction of well-designed sumps and the use of the new testing technologies to test for tears or holes will lead to landfills that will minimize the chance of leakage into the environment.

Comment:

One commenter requested that ECDC be required to undergo an Environmental Impact Study by an independent contractor paid by ECDC to review the plan changes.

Response:

Environmental Impact Studies are required for projects related to Federal lands. Under United States environmental law an EIA is referred to as the *Environmental Impact Statement* (EIS), and originated in the National Environmental Policy Act (NEPA), enacted in the United States in 1969. Certain actions of federal agencies must be preceded by an EIS.. The purpose of NEPA process is to ensure that the decision maker is fully informed of the environmental aspects and consequences prior to making the final decision. (Wikipedia). ECDC is an existing facility that has been permitted in accordance with the authority of the EPA (Utah is an approved State) and the land that ECDC has been permitted was either private or leased from the Utah State Land Trust (which has since been purchased and is private).

Comment:

One commenter made statements related to the facility siting above an aquifer, litter control, liquid waste disposal, receipt of hazardous waste and receipt of radioactive waste.

Response:

Although these areas do not relate to the permit modification under review, the following are general responses to the concerns expressed.

<u>Wastes Received</u>

There has been no change in the type of waste allowed to be disposed at the facility from that allowed in the original permit. ECDC is permitted as a non-hazardous solid waste disposal facility. Utah rules and federal regulations exempt all waste generated by a household from the hazardous waste regulations. The term "household hazardous waste" is commonly used to refer to wastes that are generated by a household but would otherwise fall under the hazardous waste regulations. ECDC, like all municipal waste

disposal facilities, receives household waste. Another class of waste that is disposed of in most municipal landfills is referred to as conditionally exempt small quantity generator hazardous waste. Federal regulations and Utah rules allow these wastes to be disposed of in municipal landfills.

Utah rules and Federal regulations require that all non-household generators of solid waste characterize the waste they generate and determine if the waste meets the definition of a hazardous waste. This characterization is based on the standards found in the federal regulations. Once the waste is characterized and it is determined that the waste can be disposed of in a non-hazardous waste landfill, the generator contracts with a disposal facility and ships the waste to the facility along with the paperwork and information required by the receiving facility. The paperwork is called the waste profile. In the case of ECDC, the waste must meet the acceptance criteria of ECDC and can not be a hazardous waste that is excluded from disposal in non-hazardous waste landfills in Utah. While not every waste profile is submitted to the Division, inspections of the facility are conducted by Division staff. As part of these inspections, Division staff review some of the waste profiles.

ECDC is prohibited by Utah rules and their permit from disposing radioactive waste without approval from the Utah Division of Radiation Control. Other than naturally occurring wastes or waste derived from human exposure to medical radiation treatment, no radioactive wastes have been disposed at ECDC. There is no evidence that trucks have been disposing of any waste “in the middle of the night” that could be substantiated. At this time, there is no proof of illegal disposal of radioactive waste or disposal of wastes not allowed by the Utah rules occurred at ECDC.

All solid waste facilities in Utah are prohibited from accepting liquid wastes in containers larger than five gallons. Like any other landfill in the state, ECDC can accept bulk liquid wastes provided that these wastes are mixed with other materials, prior to disposal, so that no liquid freely drains. The test that is used to determine if a waste contains free liquid is called the “paint filter test”. This restriction is is applicable to all solid waste facilities in Utah. ECDC currently has an area outside the landfill cell where liquid wastes are mixed with soil, ash, or other materials to absorb the liquids.

Landfills are required to apply daily cover to the waste to prevent the blowing of debris and to minimize odors and vectors such as birds. Landfills are also required to spray water on haul roads to minimize the dusting caused by truck traffic. ECDC currently provides daily cover and waters the haul roads inside the cell to minimize dust generation. Plastic bags blown during landfill activities are an issue with all landfills in Utah. ECDC is required to pick up those bags and currently hires daily help to pick up wind-blown debris both within and outside the facility. ECDC curtails activity when the wind speed reaches a point where they cannot have control of the waste as required in the permit.

UAC R315-302-1(2)(e)(i) reads as follows:

(i) No new facility or lateral expansion of an existing facility shall be located at a site:

(A) where the bottom of the lowest liner is less than five feet above the historical high level of ground water; or

(B) for a landfill that is not required to install a liner, the lowest level of waste must be at least ten feet above the historical high level of ground water.

(C) If the aquifer beneath a landfill contains ground water which has a Total Dissolved Solids (TDS) of 10,000 mg/l or greater and the landfill is constructed with a composite liner, the bottom of the lowest liner may be less than five feet above the historical high level of the ground water.

Under that rules as currently written, the ECDC facility meets the siting requirements. The siting requirements apply to all new facilities and lateral expansions of existing facilities. Each new expansion of the current cell must meet the siting criteria.

Comment:

One commenter made statement that the public hearing was scheduled for 5:00 p.m. and that this time was not convenient for the public to attend. Furthermore, the public hearing should have been scheduled for 7:00 p.m. for the public to attend.

Response:

The Division publishes the scheduled hearing time in the newspaper and meets for a at least on hour. While the Division endeavors to schedule meetings at times when the public can attend, the Division concedes that public hearings may not meet the schedules of everyone who wants to attend. People who want to make comments are still able to submit comments either by mail or by electronic mail. Also, phone numbers are published if the pubic would like to speak to someone in the Division. The Division will consider scheduling the public hearings later in the evening to anticipate when the public is more likely to attend the meeting.

Comment:

One commenter stated that the hearing minutes were not made available upon request.

Response:

Proceedings from public hearings and meetings of the Solid and Hazardous Waste Control Board are recorded and transcribed. Minutes are placed in the public record and are available upon request.

Summary and Conclusions

1. The removal of one HDPE liner and GCL from the landfill floor design brings the landfill floor design to the standard equivalent design for Subtitle D facilities.
2. ECDC has consented to utilize electrical testing of the landfill after construction using the best available technology that will detect tears and holes in the liner.
3. The liner system has been differentiated into separate designs for the floor area, the sump area, and the embankment area. The proposed permit renewal addresses the design of the floor area only.
4. The sump area of the landfill has been improved during the permit modification of 2000. The permit modification of 2000 increased the thicknesses of the sump clay by an additional equivalent of two feet and added the equivalent of two feet of clay under the bottom liner by adding GCL layers. For ECDC's sump design, there is functionally four feet of clay in the upper composite liner and two feet of clay in the bottom composite liner, far exceeding the design requirements of a Subtitle D facility.
5. While there is a concern that removing one layer of HDPE and GCL liner in the floor will increase the likelihood of contamination, there is no evidence that the removal of the HDPE and GCL will measurably increase the contamination of the aquifer. The floor area of this landfill does not collect any water and without a head pressure of leachate above the liner, there can be no significant flow past the primary (upper) liner system. Once past the primary liner system, there is still the secondary liner system that collects leachate into the leak detection system of the sump.
6. Combined with the additional testing of the liner after installation, the HELP modeling of the liner system indicates that the potential leakage from the landfill is reduced because tears and holes in the liner are eliminated.